

Prof. H. Y. Hind
F. S. S. L. L.
Windsor
Nova Scotia

LETTER

TO

The Editor of "The Halifax Citizen,"

IN ANSWER TO

MR. E. GILPIN'S PAMPHLET,

UPON THE CARBONIFEROUS DISTRICT OF

ST. GEORGE'S BAY, NEWFOUNDLAND.

BY

ALEX. MURRAY,

PROVINCIAL GEOLOGIST.

J. O. WILKES, Queen's Printer.

GEORGE B. BROWN

1871

ST. JOHN'S, NEWFOUNDLAND,
January 18th, 1875. }

Letter addressed to the Editor of the Halifax Citizen.

SIR,—

I don't know to whom I am indebted for a little pamphlet, entitled — "Sketch of the Carboniferous District of St. George's Bay, Newfoundland;" but whoever it may be, I am very thankful for it, as it gives me an opportunity of correcting some rather grave errors, into which the author, Mr. EDWIN GILPIN, has, doubtless inadvertently, fallen :—

First of all, allow me to say, that I disclaim all pretensions to the proud title of *Professor*, which Mr. GILPIN confers upon me. I never was, am not, and probably never shall be, entitled to fill the dignified position of a Professor's chair; and only claim to be heard fairly as a working Geologist of now well on for forty years' standing.

Secondly, it appears to me that either Mr. GILPIN has never read my reports, or, if he has, he ignores much that is said in them; but there is reason to suppose that he must have at least *seen* my report for 1873, as he at one part refers to certain sections contained therein. Now, I feel it to be *just possible* that some of the statements made in the said pamphlet may lead to misapprehension on the part of some of its more enlightened readers, as to the correctness of my publications upon a kindred subject; and therefore think it only right to remind Mr. GILPIN that my Maps and Reports are the result of *actual survey* of the ground; that the coast and rivers have all been carefully

measured; that the mountains and prominent points, &c., have all been kept in place by a connected system of triangulation; and that our starting points at both ends have been established accurately in Latitude and Longitude. The geological features were taken in section as the topographical survey went on; fossils and specimens were collected, and submitted afterwards to palæontological examination, and all the work protracted in the field on a large scale. Such work embraces a little more experience, surely, than simply walking over the ground, and I think it only due to me that what Mr. GILPIN has publicly stated, should be so far as publicly qualified, as to exonerate me at all events from blame, if, as I am willing to admit I may, have in some particulars been mistaken in my expressed views.

What I take exception to in this pamphlet is, 1st: the age given to the Long Range Mountains, which terminate at Cape Ray, and of the rocks which constitute by far the greater part of the Southern Shore of Newfoundland. These Mr. GILPIN appears to consider of Lower Silurian age, notwithstanding that I have in various reports and publications given tolerably good reasons for supposing them to be Laurentian. Had he, Mr. GILPIN, examined the coast, he would have seen some patches of rock which probably are of *Primordial Silurian age*, and I believe that some of the intrusive granites may be contemporaneous or of later date; but the gneissoid masses which constitute the Long Range Mountains, and extend in an unbroken chain, nearly to the most northerly extreme of the Island, have been found to be flanked unconformably, both on the East and the West Coasts of Newfoundland, by the *Potsdam formation*; the latter being succeeded by the *Calcareous rocks*, crowded with fossils.

The next paragraph I object to, is the statement that Cape Anguille and its range of hills, is "an enormous

ridge of intrusive rock running obliquely towards the plateau." I beg to assure Mr. GILPIN in reply, that I found carboniferous rocks with fossils, and limestone with snowy gypsum, right under the very Cape; and further I must beg him to understand, that with the exception of that part of the coast which lies between Cape Anguille and the Highlands, every bit of the Southern shore of St. George's Bay has been actually surveyed and closely examined; and notwithstanding the fact that we have made closer examination than usual for the purpose of ascertaining by what agency the great disturbances of the region have been affected, we have failed as yet to find the slightest indications of *igneous intrusion*; nay, we have not met with an instance of a trap dyke cutting the Carboniferous strata. As we have likewise crossed over and examined the range of hills from St. George's Bay to the Codroy River, we can now state with more confidence than ever, that the rocks of the whole range are *chiefly* if not entirely of Lower Carboniferous;—being brought into their present position on the axis of an anticlinal.

At page 5, Mr. GILPIN says, in speaking of the Codroy River, "no systematic exploration has yet been made." As I in 1866 not only dialled that river, and measured the whole series of Carboniferous strata upon it, but also made careful sections of the coast exposures from Cape Anguille to the Little Codroy River, all of which have been published, I can hardly understand how it happens that an enquirer like Mr. GILPIN, should have made such an assertion.

As the section exposed from Cape Anguille to Cape Frigor, and for some distance further East, has not yet been surveyed, I shall not take upon myself to say, whether or not, any older strata than Carboniferous make their appearance, although my opinion at present is, they do not. The dislocations of which Mr. GILPIN treats, however, I

am quite aware of, having seen them on many occasions from the deck of a vessel; but these I am inclined to attribute to quite another cause than Mr. GILPIN suggests. At the same page 5, it is stated that the Lower Carboniferous present a *general dip to the south east*. As it happens the general dip from Crabb's brook to Flat bay is *exactly the opposite*, or North West; and by what process of reasoning, or upon what data Mr. GILPIN gets "*counterparts of Triassic age*" entangled into the series, I cannot conceive.

Following the subject consecutively; next comes the remarks upon the gypsum. Although I believe the great deposits of this mineral to be pretty constant to one horizon, I have reason to think nevertheless that they are not constant in volume; but rather are in great detached masses; however, I am willing to concede that their presence is often very useful in following out the structure, as "an important key to the whole district;" but if Mr. GILPIN's "*line from Kippin's Brook to the mouth of the Great Codroy River,*" is meant to be a straight one, I can hardly imagine anything more fallacious. I must beg to inform Mr. GILPIN that on my survey, the gypseous horizon has been followed closely, and frequently the mineral found in enormous masses, all the way from the Highlands to the Cairn Mountain, and on the North side of St. George's Bay up the valley of Harry's Brook as well as at Kippin's or Romain's Brook. Moreover, had Mr. GILPIN examined the East Bay of Port-a-Port a little closer he might have found a display of the same substance there also.

At page 8, Indian Head is said to be a mass of trap. If Mr. GILPIN includes all metamorphic rocks in a general category as trap, well and good; but as the range is largely constituted of Labradorite, I am inclined to place it in the horizon of Upper Laurentian, as I also class the Cairn Mountain and other parts of the range; at the same time having more evidence to support the probability, should I be called upon to do so.

I next observe that Mr. GILPIN "*found abundant indications of petroleum upon Shoal Point.*" That there are indications of this mineral there, is perfectly true, but by what contrivance he finds an analogy between the rocks of that point, *which are Silurian*, and those of New York and Ohio, where a similar substance occurs, *which are Devonian*, I am quite at a loss to understand. As it happens that I worked out these Hamilton shales with their associated Devonian rocks in Western Canada many years ago, it may perhaps be admitted that I ought to know something about them. If Mr. GILPIN doubts the age of those bituminous rocks, let him procure some fossils from the spot, and be guided by the expressed opinion of Professor JAMES HALL, or any Palæontologist of reputation.

At page 11, Mr. GILPIN gives his summary of the geological structure of the region, and very short work he makes of it; but let us look a little at certain facts, before jumping at conclusions. If I read Mr. GILPIN's words aright, I understand him to assert that Long Point, and the whole peninsula of Port-au-Port, are of Carboniferous age; that Long Point constitutes the base of the series, and that my river sections are all above the horizon of the gypsum. Mr. GILPIN will, perhaps, be a little surprised when I tell him that by far the greater part of Long Point, and nearly the whole of Port-au-Port peninsula, are not only *not* Carboniferous rocks at all, but Lower Silurian, displayed in the clearest and most unmistakeable section of some thousands of feet thickness, from which I have a collection of beautiful and highly typical fossils. The Carboniferous rocks in Port-a-Port Bay are merely patches let down among rocks of Silurian age, which Mr. GILPIN might have seen for himself at several of the Coves in East Bay, where nothing can be clearer than the unconformity; and he might have seen that the Limestones in front of these patches, as well as the Limestone in rear,

are full of typical fossils of the Calciferous. On Long Point a strip of Lower Carboniferous runs along the North West Shore from Red Island towards Round Head, resting upon Silurian strata; and another thin patch lies inland from the latter, spreading over the upturned edges of the inferior formation.

Not having the remotest pretensions to infallibility, I neither assert nor insinuate that my work in the Geological field is by any means perfect, and should therefore feel greatly obliged to anyone who would *distinctly* point out how and where I have been in error; but as my statements and opinions are founded upon certain facts, and are the result of most careful survey and close observation, it is neither fair nor prudent that those should be adversely criticised, or altogether ignored, by every superficial explorer who may happen to walk over a very limited portion of the ground.

In the map which will accompany my forthcoming Report for 1874, a good deal of modification will be made upon the one of last year, both topographically and geologically; but the *general stratigraphical relations* will not be at all altered, and the opinions expressed in the earlier volume, will only be more substantially confirmed, in the pages which will next appear.

I am, Sir,

Your most obedient Servant,

ALEX. MURRAY.